

A plasmid-encoded anion-translocating ATPase

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Abstract

An anion-translocating ATPase has been identified as the product of the arsenical resistance operon of resistance plasmid R773. When expressed in *Escherichia coli* this ATP-driven oxyanion pump catalyzes extrusion of the oxyanions arsenite, antimonite and arsenate. Maintenance of a low intracellular concentration of oxyanion produces resistance to the toxic agents. The pump is composed of two polypeptides, the products of the *arsA* and *arsB* genes. This two-subunit enzyme produces resistance to arsenite and antimonite. A third gene, *arsC*, expands the substrate specificity to allow for arsenate pumping and resistance.

Keywords

- ATPase;
- Ion transport;
- Anion pump;
- Arsenic;
- Antimony;
- Plasmid resistance

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